

CHAPTER 23

FUEL SYSTEM SUPPLY POINT

DESCRIPTION

The FSSP is the Army's primary means for the receipt and storage of bulk petroleum and for its issue to combat forces under tactical conditions. The FSSP is not issued as a complete system. The major components are issued as separate items of equipment to add to the flexibility of the system. The number of major components depends on the size and configuration of the system. An FSSP normally consists of two 350-GPM pumping assemblies, two 350-GPM filter/separators, six 10,000-gallon collapsible tanks (An augmented FSSP increases total storage capacity by using larger collapsible tanks, six bottom loading points, two 500-gallon collapsible drum filling points, and six refueling points. These components of the fuel system are connected by about 2,400 feet of hose and 11 types of fittings. When an FSSP is requisitioned, you will only receive the hoses and fittings to connect the above components. Figure 23-1, page 23-2, shows a typical layout. Table 23-1, page 23-3, lists the components.

Receiving Manifold

The receiving manifold consists of a Y- and T-assembly (reducing from 4 to 3 inches), lengths of 3-inch suction hose, and 3-inch gate valves. With this manifold, the FSSP can receive product from more than one transporter at a time. It also provides a way to switch from one supply source to another. Grounding equipment must be used whenever fuel is received through the manifold, because contact between the manifold and the ground is not perfect. Chapter 28 gives information on receiving product into the FSSP.

Pumping Assemblies, Filter/Separators, and Collapsible Tanks

The FSSP uses specific pumping assemblies, filter/separators, and collapsible tanks. Each is described in the following paragraphs. See Figure 23-1, page 23-2, for these components.

- The 350-GPM pumping assemblies. The 350-GPM pumping assemblies are used as components of the FSSP. There are normally two per supply point.
- The 350-GPM filter/separators. Vertically mounted, 350-GPM filter/separators are used in each FSSP to remove entrained water and solid contaminants from the fuel before it is pumped into vehicles or container. There are normally two filter/separators per supply point.
- The 10,000-gallon collapsible tanks. The FSSP normally has six 10,000-gallon collapsible tanks. One hoselines manifold assembly with two T-fittings and one assembly with one T-fitting are used with each tank. The manifold as shown in Figure 23-2, page 23-4, has two rising-stem, double-acting gate valves to control the flow of fuel into and out of the collapsible tank.

Bottom Loading Points

The fuel system has six 3-inch bottom loading points to load fuel into tank semi-trailers. Each bottom loading point consists of a T-assembly (reducing from 4 to 3 inches) coupled to a 3-inch, cam-locking coupling valve followed by 25 feet of 3-inch discharge hose coupled to a 3-inch, cam-locking coupling valve.

The 500-Gallon Collapsible Drum Filling Points

There are two 500-gallon collapsible drum filling points in the FSSP. Each point consists of a T assembly (reducing from 3 to 1½ inches) coupled to a 1½-inch, cam-locking coupling valve followed by 25 feet of 1½-inch discharge hose coupled to a 1½-inch, cam-locking coupling valve. The pressure control, not a component of the FSSP, is also used for the filling operation. The inlet of the pressure control is attached to the downstream end of the 1½-inch discharge hose, and the 5-foot length of pressure control discharge hose is connected from the control outlet to the drum elbow coupler valve.

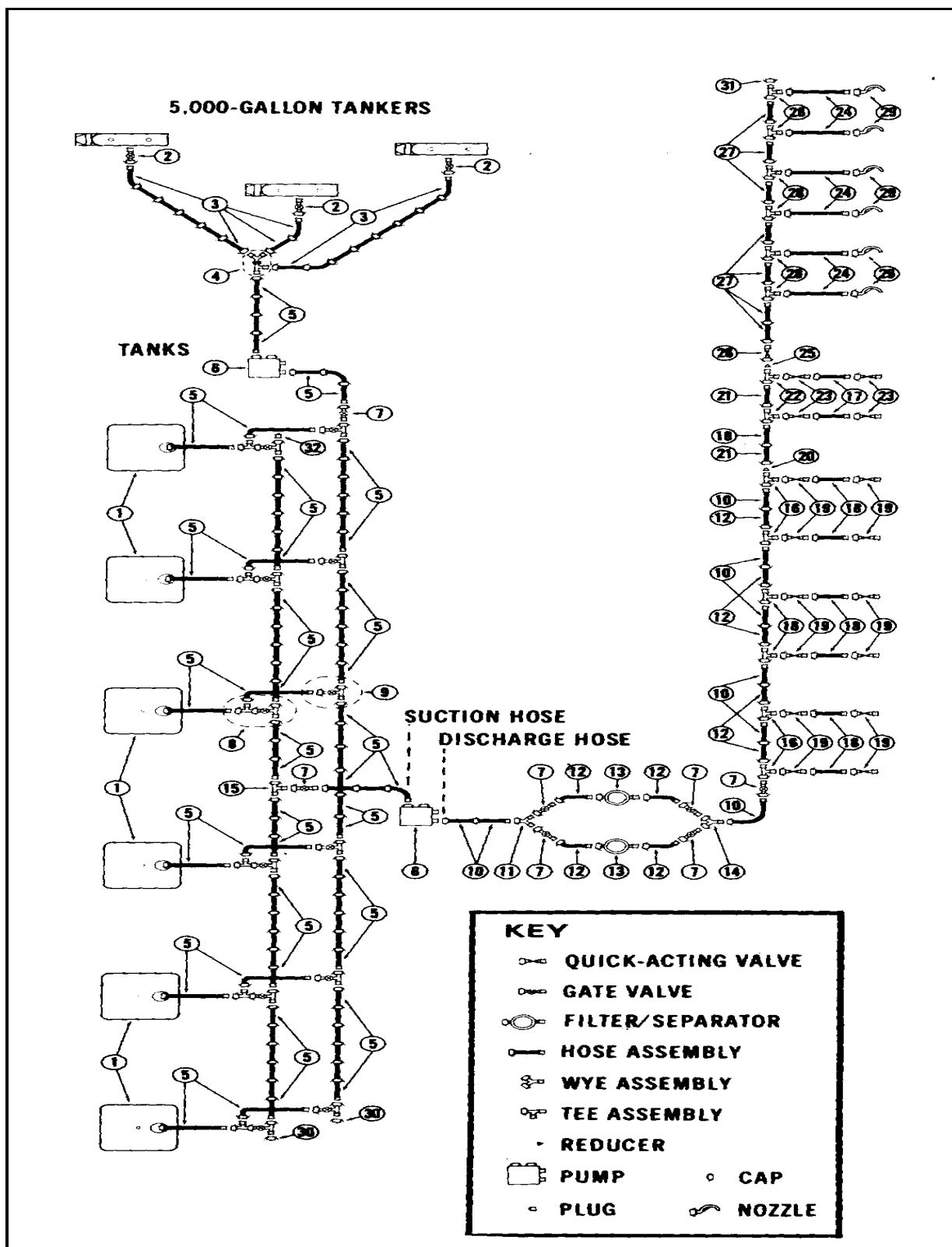


Figure 23-1. Typical layout of the FSSP

Table 23-1. Components of the FSSP

ITEM	DESCRIPTION	NO REQD
1	Tank, 10,000-gallon, collapsible, petroleum	6
2.	Valve, 3" gate, flanged, with M and F CL	3
3.	Hose, suction, 3" x 12, M CL one end, F CL other	16
4.	Y and T assembly, flanged, M CL 3" and 4"	1
5.	Hose, suction, 4" x 10', M CL one end, F CL other	83*
6.	Pump, 350-GPM, 4", with M and F CL	2
7.	Valve, gage, 4", flanged, with M and F CL	25*
8.	Manifold with two T fittings	00*
9.	Manifold with one T fitting	00*
10.	Hose, discharge, 4" x 50', with M and F CL	8
11.	Y assembly, flanged, 4", with one F CL inlet and 2 M	1
12.	Hose, discharge, 4" x 25', M and F CL	9
13/	Filter/separator, 350-GPM, 4", with M and F CL	2
14.	Y assembly, flanged, 4", with two F CL inlets and one	1
15.	T-assembly, flanged, 4" , with two M CL and one F	1
16.	T assembly, flanged, 4" x 3", with one 4" M CL, one	6
17.	Hose, discharge, 1½" x 25', M and F CL	5
18.	Hose discharge, 3" x 25', M and F CL	4
19.	Valve, quick-acting, 3", M and F CL	12
20.	Reducer, 4" F CL x 3" M CL	1
21	Hose, discharge, 3" x 50', M and F CL	2
22.	T assembly, flanged, 3" x ½", with one 3" F CL, one	5
23.	Valve, quick-acting, 1½" M CL	4
24	Hose, discharge, 1" x 25', M and F CL	6
25	Reducer, 3" F CL x 2" M CL	1
26.	Valve, quick-acting, 2", M and F CL	1
27.	Hose, discharge, 2" x 25', M and F CL	7
28.	Tee, reducing, 2" F CL x 2" M CL x 1" M CL	6
29.	Nozzle, 1", with adapter	6
30.	Dust cap for 4" CL	2
31.	Dust cap for 2" CL	1
32.	Dust plug for 4" CL	1
NOTE: *Each of the six storage tanks comes with a manifold consisting of eight lengths of hose, one double T, and one single T, and two 4-inch . gates valves.		

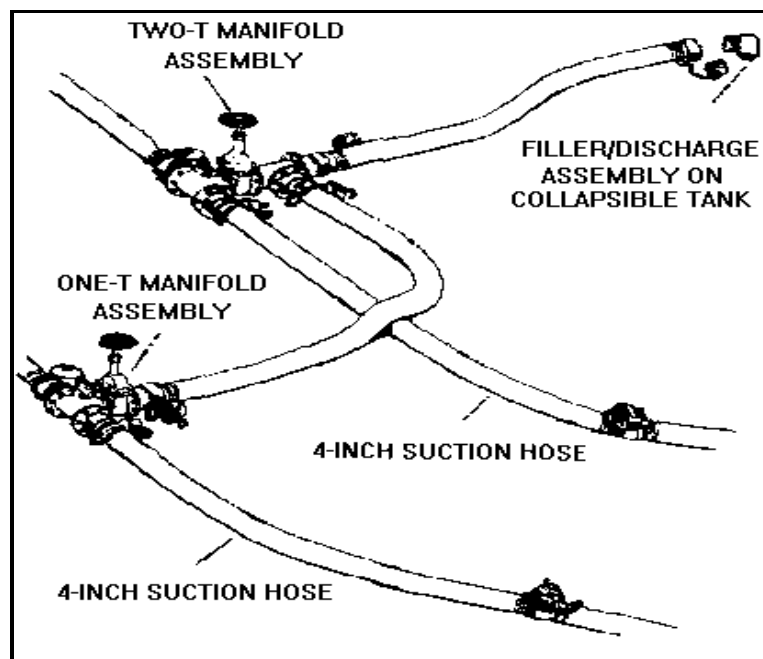


Figure 23-2. Manifold and hose assemblies

Can and Drum Filling and Vehicle Refueling Points

There are six 5-gallon can and 55-gallon drum filling and vehicle refueling points in the FSSP. Each point consists of a T-assembly (reducing from 2 to 1 inch) followed by 25 feet of 1-inch discharge hose coupled to a 1-inch aluminum nozzle.

Hose, Fittings, Accessories, and Tools

The FSSP uses suction and discharge hoses, various types of fitting assemblies, and certain accessories and tools. These components are described in the following paragraphs.

- Suction and discharge hoses. The two types of hose assemblies used in the FSSP are suction hose assemblies and discharge hose assemblies. Each hose assembly has a male coupling (with a dust cap) on one end and a female coupling (with a dust plug) on the other end. Figure 23-1, page 23-2, shows where the lengths of hoses are used. The dust caps and plugs must be used when the hose sections are not connected to the system.

- Fitting assemblies. Eleven types of fitting assemblies as shown in Figure 23-3, page 23-5, are used in the FSSP to connect hose sections, valves, and components. Dust caps and plugs must be kept on the assemblies when they are not in use. To prevent loss, dust caps and dust plugs are attached to the hose fittings with a chain. Ensure that all fittings have gaskets. Chapter 28 shows the location of each fitting assembly.

- Accessories and tools. Accessories and tools come with the FSSP so that it can be connected to different fuel transporters, other pumping assemblies, or pipelines. They can also be used to connect the components of the FSSP in many combinations. The tools used to repair hose assemblies include a hose clamp locking tool, buckles, and bandings. Accessories include an adapter for connecting a tank car to a hose assembly, a pipe clamp coupling, a pipe coupling for connecting the FSSP to a pipeline, reducers for connecting different size hoses, coupling halves (flanged and threaded) to make a number of connections, gate valves, and Y-fittings.

USE

The FSSP is used at distribution points to provide storage facilities for transferring bulk fuel from one means of transport to another and at dispensing facilities for bulk reduction or delivery of fuel to using vehicles. The FSSP can receive product from tank trucks, railway cars, pipelines, hoselines, and aircraft. Since it can also receive fuel from ocean tankers, it is able to support beached operations. It can store 60,000 gallons of bulk petroleum. It can store even more if additional or larger collapsible tanks are added. However, this expansion

requires additional hoses, fittings, and valves. The FSSP can be easily moved from one place to another. It can be divided in half to handle two different types of fuels at two different locations as shown in Figure 23-4, page 23-6. It can also be changed to a 10-point, rapid-refueling system for rotary aircraft.

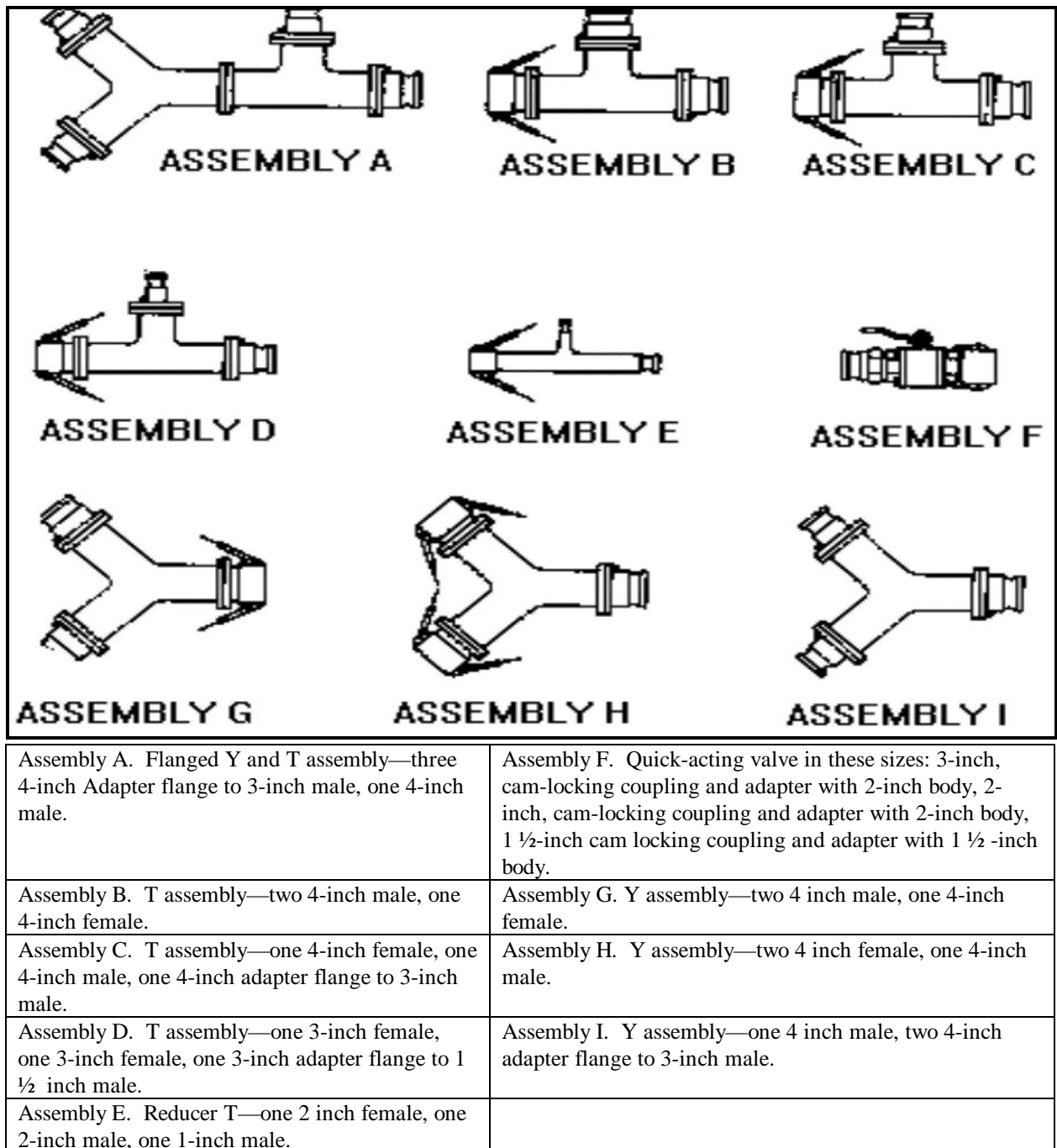


Figure 23-3. Fitting assemblies in the FSSP

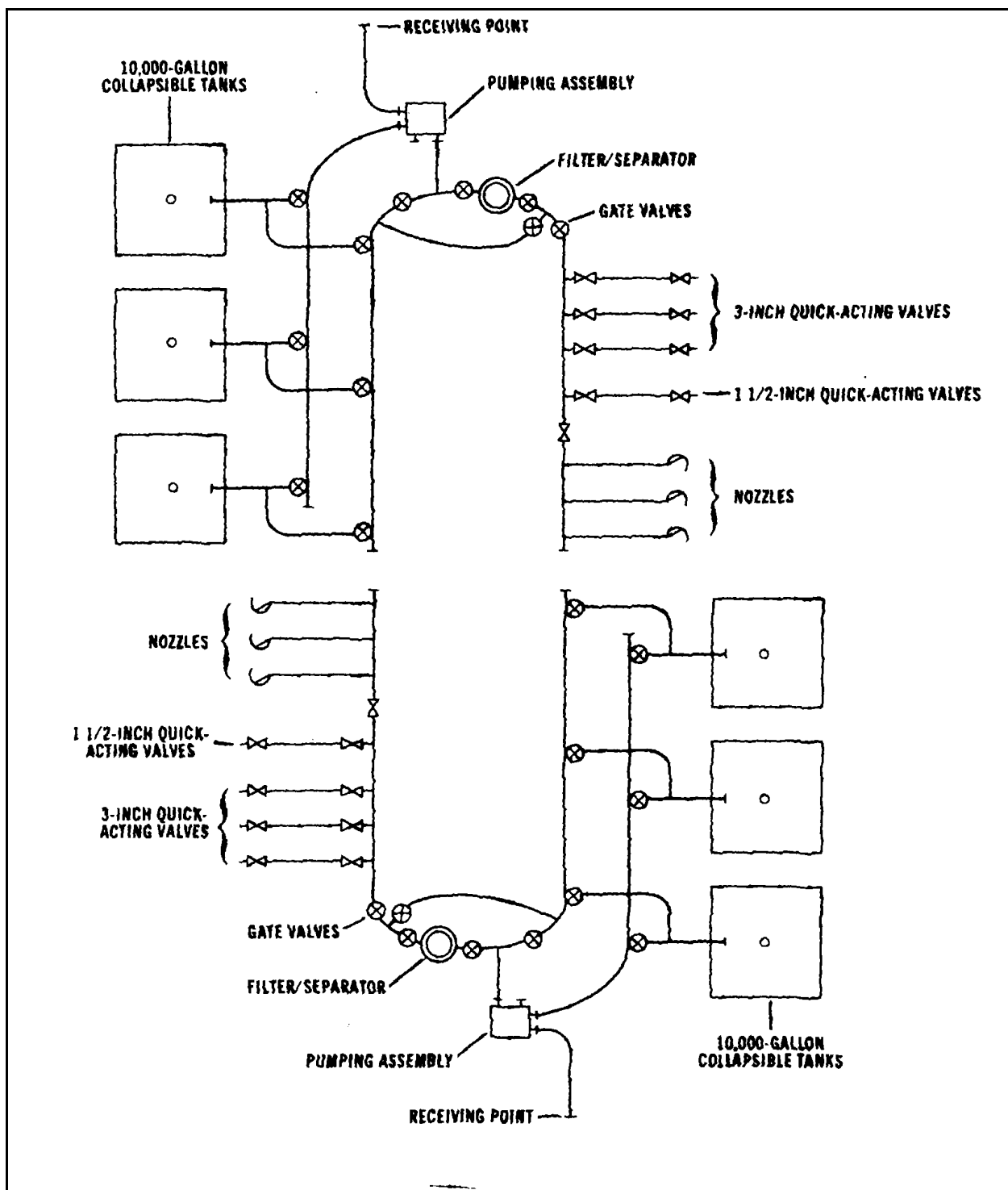


Figure 23-4. Suggested layout for fuel system divided for handling two different fuels or for moving